the round-trip timer 36 for each packet expires, the size of the congestion window is adjusted. Generally, in response to receipt of negative acknowledgments at transmitter 15, the transmission rate is decreased. Where no negative acknowledgments are received in a predetermined round-trip time, the transmission rate is increased. If no negative acknowledgments are received during the round-trip time, transmitter 15 assumes packet transmission was successful and increases the congestion window. The transmitter 15 then returns to step 92, where the round-trip time is updated, as necessary, and continues to inject packets into network 12. This process continues until there are no more data packets to transmit, or until a re-transmission time-out occurs, as will be described below. --

a1 cont'd

On page 12, third paragraph

--In the present invention, the initial round-trip time can be estimated, as in the prior art, during the synchronization phase of the 3-way handshake. However, since the round-trip time can vary over the life of a connection, it is preferable that it be updated during the network session on an ongoing basis. In a presently preferred embodiment, the round-trip time is updated by periodically setting a TCP option on an outgoing data packet requesting a round-trip time update. On detecting this round-trip time update request, receiver 17 responds with a forced acknowledgment, a round-trip time update acknowledgment, the purpose of which is to measure the current round-trip time. This permits the use of Van Jacobson's method for calculating the round-trip time. --

a2

on page 13, first paragraph

-- Generally, re-transmission time-outs are required because individual negative acknowledgments may not reach transmitter 15. Negative acknowledgments like all other packets are susceptible to loss in routers 18, route flapping and physical connection failure. On a re--transmission time-out, transmitter 15 backs off for a predetermined period, ie. it goes into slow-start and sets its congestion window to one. Transmitter 15 then operates in multiplicative increase mode until it hits a threshold value, at which point it reverts to a linear increase for the congestion window. The threshold value can either be threshold value set when transmitter 15 receives three duplicate negative acknowledgments, as described above. Or, if such a threshold value has not been previously set, the threshold value is set, on detection of a re-transmission time-out, as half the value of the current congestion window length. An exponential back-off for

a3